

Ming Wong
November 1 2017
Period 7 Hannan
Essay

Chinese Madame Curie

Have you ever heard of Chien Shiung Wu a woman scientist from China? She was one of the most important physicists of the 20th century. She was an important contributor on the Manhattan Project during World War II that produced the first nuclear weapon. She developed the Wu experiment which disproved the hypothetical law of conservation of parity. Wu's expertise in nuclear physics earned her various nicknames such as "the Chinese Madame Curie" and "Queen of Nuclear Research".

Chien-Shiung Wu was born on May 31st 1912 in Lihue, Taicang China. Her full name was Chein Ying-Shiung-Hao-Jie which meant heroes and outstanding figures. She was the middle child of three children, her younger brother Chien Hao and her older brother Chien Ying. Her mother Fan Fun Hau was a teacher and her father Wu Shiung Yi was an engineer. Wu began her elementary school education at a girl only school her father created because he thought it was important for girls to have an education. Her father named the school Ming De Elementary school. In 1923, Wu finished elementary school and moved away from her hometown to attend a boarding school called Suzhou Womens Normal School. She had a passion for science but she was worried she might not be prepared for university level chemistry, math, and physics. Her father believed that she should be able to do whatever she wanted, so he gave her some textbooks to prepare her for the exam. In 1929, she was accepted into China's National Central University and received her degree in physics in 1934. For the next two years, she did graduate level study in physics and worked as an assistant at

States was in the middle of World War II, and Wu wanted to help her family and country so she moved to Columbia University in New York City to work on the Manhattan Project. She was among a small group of female researchers that worked with hundreds of the world's top scientist under strict conditions and tons of pressure to build a nuclear bomb. Wu was the only chinese physicist that worked on the Manhattan project.

After the war Wu continued her research at Columbia University and became one of the world's foremost authorities on the specialized branch of nuclear physics called beta decay. In the 50's Wu began to work with researchers Chen Ning Yang and Tsung-Dao Lee to disprove a physics theory called conservation of parity that many scientists believed was a law of nature. This theory states that nuclear particles behaved the same in a right handed system as they would in a left handed system for electromagnetic interactions and strong interactions. Wu's experiment proved that in certain subatomic reactions (weak interactions), the particles would not disperse the same in a right handed and left handed system. Disproving the conservation of parity for weak interactions earned Chen Ning Yang and Tsung-Dao Lee a nobel prize in 1957. Wu was not recognized for her contributions. One theory of why she was not included was that she was female and was therefore less important in the project than the two male physicists. Wu was disappointed for not being recognized for the Nobel Prize but she kept it to herself and didn't talk publicly about the matter.

Wu would continue to make other accomplishments throughout her career. In 1966 she published a book on beta decay and would remain the definitive textbook on the subject. In 1975 she made history with becoming the first female president of the American Physical Society. Professor Wu retired from teaching in 1981 but she continued with her research. Wu carried out an experiment that confirmed the E.M.L Pryce and John Clive calculations on the correlation of the quantum polarizations of two photons going in opposite directions. Wu also conducted research on molecular changes in humans cells caused by sickle cell anemia.

Professor Wu died in 1997 from her second stroke at age 84. She left behind a legacy of achievements and inspired other women to be a part of the scientific community. She had a quote which said "The only thing worse than coming home from the lab to a sink full of dirty dishes is not having gone to the lab at all".

Sources:

- <http://bnrc.berkeley.edu/Famous-Women-in-Physical-Sciences-and-Engineering/chien-shiung-wu.html>
- https://en.wikipedia.org/wiki/Chien-Shiung_Wu
- <https://www.biography.com/people/chien-shiung-wu-053116>
- <http://discov-her.com/en/article/chien-shiung-wu-the-first-lady-of-physics>